54. (New) A method of depositing a metal layer on a semiconductor wafer comprising:

depositing a seed layer on a surface of the wafer;

immersing the wafer in an electrolytic solution containing metal ions;

biasing the wafer negatively with respect to the electrolytic solution so as to create a current flow at a first current density between the electrolytic solution and the wafer and thereby deposit a plated layer electrolytically on the wafer; and

after a combined thickness of the seed and plated layers has reached a predetermined value, increasing the current flow to a second current density greater than the first current density.

55. (New) The method of claim 54 wherein the plated and seed layers include copper.

56. (New) The method of claim 542 wherein a top surface of the semiconductor wafer includes features to be

filled with metal and the method includes applying a current flow at a third current density such that features are filled with metal.

57. (New) The method of depositing a metal layer on a semiconductor wafer comprising:

immersing a wafer having a seed layer on the surface thereof in an electrolytic solution containing metal ions;

biasing the wafer negatively with respect to the electrolytic solution so as to create a current flow at a first current density between the electrolytic solution and the wafer and thereby deposit a plated layer electrolytically on the wafer; and

after a predetermined time, increasing the current flow to a second current density greater than the first current density.

58. (New) The method of depositing a metal layer on a semiconductor wafer comprising:

depositing a seed layer on the surface of the wafer;

contacting the wafer with a electrolytic solution containing metal ions;

applying a plating current to the wafer so as to create a current flow at a first current density between the electrolytic solution and the wafer and thereby deposit a plated layer electrolytically on the wafer; and

after a combined thickness of the seed and plated layers has reached a predetermined value, increasing the current flow to a second current density greater than the first current density.

59. (New) The method of depositing a metal layer on a semiconductor wafer comprising:

depositing a seed layer on the surface of the wafer;

contacting the wafer with a electrolytic solution containing metal ions;

applying a plating current to the wafer so as to create a current flow at a first current density between the